



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,281	02/15/2006	Ichiro Gondo	Q89972	3106
23373	7590	10/17/2007		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER TRINH, THANH TRUC	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 10/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/568,281

Applicant(s)

GONDO ET AL.

Examiner

Thanh-Truc Trinh

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/15/2006.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ono (PG Pub 20030013008).

Regarding claim 1, as seen in Figure 13, Ono discloses an image sensor (or dye-sensitized solar cell – See paragraph 0220) comprising a first substrate (top 100) having a light transmitting property; a semiconductor electrode (220b) containing a sensitizing dye and arranged in such a manner that a first surface of the semiconductor electrode faces the first substrate; a first collector electrode (mid 210 adjacent to 220b) arranged on a second surface of the semiconductor electrode; an insulating layer (middle 100) arranged in contact with the first collector electrode (middle 210 adjacent to 220b); a catalytic electrode layer (400) arranged in such a manner that a first surface of the catalytic electrode layer faces the insulating layer (middle 100); a second substrate (bottom 100) arranged on a second surface of the catalytic electrode layer; and an electrolyte material (300) incorporated in the semiconductor electrode, the first collector electrode and the insulating layer. (See paragraphs 0164-0166). Layer (400) is made of platinum, platinum black (See paragraph 0166), therefore it is the Examiner's position that the layer (400) is a catalyst because platinum is a catalyst material.

Regarding claim 3, Ono discloses the semiconductor electrode is prepared from titanium oxide. (See paragraph 0061, 0204)

Regarding claim 4, as seen in Figure 13, Ono discloses the first collector electrode (middle 210 adjacent to 220b) is in the form of porous layer as leak 100a runs through it. (See paragraphs 0164-0166).

Regarding claim 5, as seen in Figure 13, Ono disclose the collector electrode (middle 210 adjacent to 220b) having leaks 100a runs through it. Therefore it is the Examiner's position that the first collector electrode has a planar configuration in a grid pattern.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Nakamura (US Patent 6291763).

Ono discloses an image sensor (or dye-sensitized solar cell) as described in claim 1.

Ono does not teach the second substrate is made of ceramic.

Nakamura teaches using a ceramic substrate. (See col. 30 lines 23-28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Ono by using ceramic substrate as taught by Nakamura, because it would provide a supporting substrate to build up photovoltaic cells. (See col. 30 lines 23-28).

3. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono (PGPub 200300130081)

Ono discloses an image sensor (or dye-sensitized solar cell) as described in claim 1.

Ono does not specifically teach, in the embodiment described in Figure 13, a second collector electrode between the second substrate and the catalytic electrode layer, wherein the second electrode has a planar configuration in a grid pattern.

With respect to claim 6, as seen in Figure 5, Ono however teaches a collector electrode (top metal lead 11 which is close to the electrolyte layer 30) forming between substrate 50a and 40a. Since layer 40a (or counter electrically conductive layer) can be made of metal such as platinum or carbon, it is the Examiner's position that layer 40a is

Art Unit: 1795

functional equivalent to a catalyst. Therefore the top metal lead 11, a second collector electrode, is formed between a substrate (50a) and the catalyst layer (40a). (See paragraphs 0131, 0141).

With respect to claim 7, as seen in Figure 5, the second collector electrode (top metal lead 11) is in the form of a grid pattern.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device as discussed in Figure 13 of Ono by providing a second electrode having grid pattern as taught in Figure 5, because the metal lead would reduce the resistance of conductive layers. (See paragraphs 0055 and 0133).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Truc Trinh whose telephone number is 571-272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT
10/14/2007


NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700